

ABSTRACT

A resonance element array 200 is disposed between a primary radiator 1 and a lens 3. In the resonance element array 200, resonance elements of linear conductors and variable reactance circuits are arranged on a dielectric substrate. Fixed resonance elements are excited by an electromagnetic wave from the primary radiator 1 such that a control voltage is applied to fixed variable reactance circuits by a control portion, and the direction of optical paths to be collimated by the lens 3 is electronically changed. Thus, an antenna device, in which a beam scanning is speeded, power consumption for the beam scanning is reduced, operation noise in the beam scanning is eliminated, the reliability is increased, and, when required, the direction the beam of can be directed to any direction, can be obtained. Furthermore, when necessary, the beam radiation pattern can be changed.